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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/626,214

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Robert C. Meier

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EXAMINER

PEACHES, RANDY

ART UNIT

PAPER NUMBER

2617

NOTIFICATION DATE

DELIVERY MODE

02/26/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/626,214

Applicant(s)

MEIER ET AL.

Examiner

Randy Peaches

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-105 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-23, 25-35, 37-44, 46, 48-54, 56, 57, 65, 67, 68, 70-72, 74, 77, 80, 84, 86-88, 90, 92, 96, 99, 100 and 102 is/are rejected.
- 7) ☒ Claim(s) See Continuation Sheet is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims objected to are 12,24,36,45,47,55,58-64,66,69,73,75,76,78,79,81-83,85,89,91,93-95,97,98,101 and 103-105.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. ***Claims 46,49-50,56,65,71,77,84,87-88,92,96,99 and 100*** rejected under 35 U.S.C. 102(e) as being anticipated by Liu (U.S. Patent Publication Number 2005/0009587 A1).

Regarding ***claims 46, 65, 77, 84 and 96***, Liu discloses notifying an access point by a power save 802.11 station that the station is operating in an automatic power save delivery mode. See paragraph [0070];

- automatically sending a downlink frame to the station when the access point determines the station is in an awake state. See paragraph [0070];

- buffering a downlink frame by the access point when the access point determines the station is in a power save state. See paragraph [0087];
- negotiating a periodic wakeup schedule, wherein Liu describes as a (TXOP) between the station and an access point, the schedule comprises a scheduled start time and a wakeup period, the wakeup period is defined as the time between each scheduled wakeup time and corresponds to a packet rate for an interactive voice communications session. See paragraph [0059];
- synchronizing wakeup times with the 802.11 Timer Synchronization Function. See paragraph [0085]; and
- sending a poll by the access point at the start of each scheduled wakeup time, the poll comprising a poll frame, the poll frame comprising a flag indicating if the access point has a downlink frame buffered for the station. See paragraph [0102 and 0144].

Regarding **claims 49,87 and 99**, according to **claims 46,84 and 96** Liu continues to disclose wherein the station stays in an awake state following each scheduled wakeup time until the access point sends a frame with a flag set to indicate that the access point does not have a downlink frame buffered for the station. See paragraph [0050].

Regarding **claims 50 and 88**, according to **claims 46 and 84**, Liu discloses wherein the station is a voice station. See paragraph [[0023], wherein Liu discloses of the STA sending voice traffic streams.

Regarding **claims 56,71,92 and 102** according to **claims 46,66,84 and 96**, Liu discloses the station is a power save voice station (see paragraph [0023]), the method further comprising:

- sending a message by the station to the access point to negotiate a fast wakeup schedule at the start of an interactive voice session. See paragraph [0059]; and
- sending a message by the station to the access point to terminate the fast wakeup schedule at the end of the interactive voice session, wherein the negotiation is performed with a TXOP. See paragraph [0059].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-11,13-23,25-35,37-44,48,51-54,57,67-68,70,72,74,80,86,90 and 100** are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent Publication Number 2005/0009587 A1) in view of Sherman (U.S. Patent Publication Number 2003/0161340 A1).

Regarding **claims 1,13,25,37**, Liu discloses a system utilizing the APSD protocol specified in the 802.11e draft for power saving in a WLAN. wherein a station (STA-A,STA-B) switches between a wakeup state and a doze state, the steps comprising:

- switching to a doze state. See last sentence in [0070];
- switching to a wakeup state, wherein the said station wakes-up from the sleep state. See paragraph [0070];
- transmitting an uplink frame, wherein Liu teaches of send PS-polls to an access point. See paragraph [0070];
- receiving a buffered downlink frame from the access point. See paragraph [0050]; and
- returning to the doze state only after a flag, wherein a flag is described by Liu as a "More_Data" bit, in the buffered downlink frame indicates that the access point does not have another buffered downlink frame for the station. See paragraph [0050];
- wherein the power consumption in the doze state is less than the power consumption in the wakeup state. See paragraph [0023].

However, Liu fails to clearly render sufficient support as to receiving an acknowledgement for the uplink frame from the access point.

Sherman teaches in paragraph [0031] wherein the STA sends a frame to the PC/AP that includes an Acknowledgement of the received beacon.

Therefore at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Liu to include Sherman in order to allow the said STA to acknowledge the receipt of a beacon transmitted from an AP.

Regarding **claims 2, 14, 26**, as the combination of Liu and Sherman are made, the combination according to **claims 1, 13, 25**, Liu continues to disclose notifying an access point at the 802.11 station is operating in an automatic power save delivery mode. See paragraphs [0028,0049,0053,0070].

Regarding **claims 3, 15, 27, 38**, as the combination of Liu and Sherman are made, the combination according to **claim 1,13,25,37**, Liu continues to disclose the 802.11 station is a voice station and the uplink frame is a periodic voice packet transmission, the method further comprising querying the access point for buffered downlink transmissions at a rate that corresponds to a packet rate for an interactive voice communications stream. See paragraph [0049]

Regarding **claims 4, 16,28**, as the combination of Liu and Sherman are made, the combination according to **claims 3, 15, 27**, Liu continues to disclose wherein sending a predetermined uplink frame during a period of silence suppression to query the access point for a buffered downlink transmission, wherein the said station under the 1997 standard send a PS poll query to the AP. See paragraph [0070,0071].

Regarding **claims 5, 17, 29,39,89**, as the combination of Liu and Sherman are made, the combination according to **claims 3,16,28,37,84**, Sherman discloses wherein the predetermined uplink frame is a null data frame. Sherman teaches in paragraph [0031] wherein the null data frame must be sent in response to the PC/AP.

Regarding **claims 6, 18, 30,40**, as the combination of Liu and Sherman are made, the combination according to **claims 3, 15,27,37,,** Liu continues to disclose wherein

- establishing scheduled wakeup times with the access point, which coincide with 802.11 Beacon transmissions. See paragraphs [0080,0085,0084];
- automatically receiving a buffered downlink frame from the access point following a scheduled wakeup time. See paragraph [0070, 0079];
- suppressing successive predetermined uplink frames during periods of silence suppression when the access point indicates it does not have a buffered downlink frame. See paragraph [0087];
- returning to the power save state until the occurrence of at least one of the group consisting of a next scheduled wakeup time and the 802.11 station has an uplink frame. See paragraph [0070].

Regarding **claims 7,19,31,41,52,100,,** as the combination of Liu and Sherman are made, the combination according to **claims 3,13,25,37,51,96**, Liu continues to disclose wherein setting a flag by the 802.11 station in the uplink frame to indicate that the 802.11 station will stay in the operating state to send a successive uplink frames. See

paragraph [0070], wherein Liu teaches that in the 1997 802.11 spec. where the station send PS-poll to the AP, of which the station remains in the awake mode.

Regarding **claims 8,20,32,42,48,53,70,80,86,98**, as the combination of Liu and Sherman are made, the combination according to **claims 7,19,31, 47,52,69,84,96**, the combination further teaches comprising:

- receiving a poll from the access point to solicit an uplink transmission. See Liu paragraph [0050]; and
- sending an uplink frame without first sensing a channel to determine if the channel is idle. The Examiner interprets the Applicant's claim language in that the STA sending a frame (null) despite the fact there is no traffic. See Sherman paragraph [0031].

Regarding **claims 9,21,33,43,51,67**, as the combination of Liu and Sherman are made, the combination according to **claims 8,20,32,46,65**, the combination further teaches comprising receiving a poll piggybacked onto a downlink data frame. See Sherman paragraph [0031].

Regarding **claims 10,22,34,90**, as the combination of Liu and Sherman are made, the combination according to **claims 9,21,33,53,84**, the combination further teaches comprising adding a data link acknowledgement for a downlink data frame to an uplink

data frame. See Sherman paragraph [0031], wherein Sherman teaches of sending a frame including and ACK.

Regarding **claims 11,23,35,44,54,68**, as the combination of Liu and Sherman are made, the combination according to **claims 9,21,33,53,65**, the combination further teaches comprising receiving a data link acknowledgement piggybacked onto a downlink data frame. See Sherman paragraph [0031].

Allowable Subject Matter

Claims 12,24,36,45,47,55,58-64,66,69,73,75-76,78-79,81-83,85,89,91,93-95,97-98,101 and 103-105 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Peaches whose telephone number is (571) 272-7914. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/626,217
Art Unit: 2617

Page 10

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Randy Peaches
RP


JOSEPH FEILD
SUPERVISORY PATENT EXAMINER